

AN

INAUGURAL DISSERTATION

ON

CHOLERA INFANTUM;

SUBMITTED TO THE CONSIDERATION OF

The Honourable Robert Smith, Provost,

AND THE REGENTS

OF THE

UNIVERSITY OF MARYLAND.



BY SHADRACH ALFRIEND,

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THE HISTORY OF THE

REIGN OF KING CHARLES THE FIRST

IN WHICH ARE CONTAINED
THE
MOST IMPORTANT AND INTERESTING
CIRCUMSTANCES OF HIS REIGN
FROM HIS MARRIAGE TO HIS DEATH
IN THE YEAR 1649
BY
JOHN BURNET
BISHOP OF SALISBURY
IN TWO VOLUMES
THE SECOND VOLUME
LONDON
Printed by J. Sturges, at the Angel in St. Dunstons Church-yard, 1724

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TO

DR. PETER M. HARDAWAY,

Of Dinwiddie County, Virginia.

DEAR SIR,

In prefixing your name to this essay, I have only fulfilled a duty which every pupil owes to his preceptor; but should accuse myself of ingratitude, were I to pass over obligations of a superior nature unnoticed, as it was from your friendly councils, I first learned to appreciate the superiority of medical knowledge. Under your tuition, I have had the most extensive opportunity of improvement, in that profession so successfully pursued by yourself, and to which my future life will be devoted.

Before I conclude, permit me to assure you and your amiable consort, who has always shown the greatest disposition to make my situation as comfortable as possible, when a resident at your house; that my gratitude will be permanent as my existence, and that the recollection of your benevolence, will always excite in me, sentiments of the highest esteem.

That you may live as heretofore, useful in public, amiable in private life, and in the most perfect enjoyment of that health, which you have been so instrumental in restoring to others, is the sincere wish of

Your ever grateful pupil,

THE AUTHOR.



TO

ROBERT SPANGE, L. L. D.

Of Petersburg, Virginia.

The following essay is inscribed as a small but sincere assurance of the high esteem and regard of his affectionate friend and former companion,

THE AUTHOR.

AN ESSAY
ON
CHOLERA INFANTUM.

Venienti occurritle morbo.—PERSIUS.

INTRODUCTION.

NO diseases to which the human species is incident, in the different progressive stages of life, more particularly require our commiseration and the extension of medical aid, than those which occur at the period of infancy and childhood. So great is the irritability of their delicate frames, and so often are they mismanaged by those to whom the immediate care of them is intrusted, that they often become the subjects of much pain and misery. So great has been the mortality among children, particularly in large cities, that it has been found from accurate investigations, that nearly one half die within the first four or five years.

The causes and seats of infantile diseases are various: none of these are more common and distressing, than those which affect the alimentary

canal; of such importance has been deemed the due action of these parts, that many physicians, both ancient and modern, have considered a diseased state of them as the principal source of destruction among children. From the regularity of their appearance in most seasons, and from the different forms which they assume, proving very frequently mortal, I think but few diseases call for greater attention.

Before I proceed to take further notice of the disease to which this dissertation will be confined, I shall take a very brief view of the most prominent opinions, suggested by writers on the subject: those of Doctor Cleghorn and Doctor Rush, appear to have arrested the attention of the medical world, more than any which preceded them.

Doctor Cleghorn, treating of the diseases of minorca, describes this complaint as invading children some weeks sooner in the season, than similar affections are discovered in adults. This he attributes to the greater excitability and tenderness, of the alimentary canal in the infantile system. Further, in speaking of the tertian intermittent fever, he says, "As the cold fit goes off, some billious matter is commonly discharged by vomit or stool." Doctor Rush in his first volume of Medical Inquiries, observes, "from the discharge of bile which generally introduces the disease, from the remissions and exacerbations of the fever which accompanies it, and from its occurring nearly in the same season, with the cho-

lera and remitting fever in adults; I am disposed to consider it as a modification of the same diseases. Its appearing earlier in the season than the cholera and remitting fever in adults, must be ascribed to the constitutions of children being more predisposed from weakness, to be acted upon by the remote causes which produce those disorders."

From the remarks of those gentlemen, it does not appear that they supposed cholera infantum, to be a distinct disease, but a modification or variety of intermitting or remitting fever, and cholera morbus of adults.

Without enumerating other opinions which would be only a compilation of erroneous impressions, which could serve no other purpose than to shew the changes that have taken place in medical writings, in the different progressive stages of society. I will offer the one I have thought proper to adopt, which is the one suggested by the ingenious professor of the practice and theory of medicine in this university, whose ideas of the nature and cause of the disease, appear to me to be more correct than any which have preceded him.

Cholera infantum does not appear to be a modification or variety of the intermittent or remittent fever or cholera morbus of adults, nor does it appear to acknowledge marsh miasmata, as its remote cause, but a disease peculiar to infants, depending upon heat as its remote or predisposing cause, perhaps by producing indirect debility. That it is not a variety of intermittent or remittent

fever, or cholera morbus of adults, I infer from its appearing earlier in the season than either of those diseases; from its becoming more frequent as our country becomes cleared, and more exposed to the influence of the sun; and by its ceasing to exist at a period when it should occur more frequently, if it depended on the cause which gives rise to intermittent or remittent fever. If cholera infantum were a variety or modification of the aforesaid diseases, in the months of September and October, I should suppose it would be more prevalent, but we see those diseases raging with their greatest violence unaccompanied by cholera infantum. From these considerations I am induced to consider it a distinct disease, and one peculiar to infants; not acknowledging marsh miasmata as its remote or predisposing cause, but heat acting upon the delicate and irritable infantile system, producing indirect debility, or a greater aptitude to be acted upon, by the different exciting causes.

HISTORY

OF

CHOLERA INFANTUM.

THIS disease appears to be most prevalent in the larger cities of the United States; and is not described I believe by any European writer, unless Dr. Cleg-horn's observations may be considered as a description. Dr. Potter states that it was confined to Philadelphia and New York, for many years, and that it was not noticed in any of our towns or villages, until about twenty years past; and has existed not more than forty years; but of late, it has become an annual epidemic disease, and very fatal—and it has also appeared in many parts of the country. Cholera infantum appears to be of modern date, from the writings of different physicians, it seems from the few that have written on it, that it was first noticed about thirty or forty years ago. This disease occurs about the last of May generally, and continues until the last of August or September, though from the premature heats of summer, it may occur much earlier, or from the unusual continuance of the same, it may be considerably protracted.

The disease becomes most prevalent, and is attended with symptoms of the greatest danger, during the warmer months of summer, June and July, as may be perceived by the bills of mortality during these months.

The temperature of the weather, has a very considerable influence on this disease. Sudden and long continued rains, after a very dry state of the atmosphere

generally favour the operation of the exciting cause: hence the reason, why in some years, it proves so alarming and distressing, whilst in others, from the mild and more uniform temperature of the atmosphere, it is comparatively of rare occurrence.

Although this complaint may attack children of any age, we find that it affects them more frequently during the second summer after birth, and is not only less likely to occur during the third or fourth year, but is then less dangerous.

It is not unfrequently preceded by the same premonitory symptoms that precede the common bilious intermitting and remitting fevers. It comes on and is continued with evident symptoms of pyrexia, loss of appetite, occasional fits of nausea, and sometimes vomiting without the purging, but more usually the contrary. It most frequently comes on with violent purging and vomiting, which continue either together or alternately. It is also in many cases, especially when more wild, a mere chronic affection commencing with a diarrhæa, inconsiderable fever, and but little affection of the stomach, the child gradually resting easy.

The matter evacuated is more or less mixed with bile; its appearance is green or yellow. The stools, however vary in their appearance, and have been distinguished into "curdled,* slimy, clayey, watery, and bloody." In many cases, the stools are large and fetid, but in others they are without smell, and consist chiefly of the aliment as taken in, without having undergone any material change in its passage. Sometimes in violent cases, where the disease has run to a considerable length, some degree of tenesmus will en-

* Underwood on the diseases of children.

sue. Worms are often discharged in different stages of this disorder; but are to be considered as accidental, having no agency in causing the disease.

“The symptoms enumerated, are accompanied with a high degree of fever, it sometimes remits every other day, and is sometimes continued. The pulse in the beginning of the disorder, is sometimes quick and very tense, full, and hard. In many cases the pulse is weak and frequent from the beginning, especially where the case is slow in its progress; but in the advanced stage of the disease, from the excessive evacuations, it soon loses its force and becomes weak, frequent, and quick; great thirst frequently attends through the disease; the skin hot and dry, though sometimes during the nausea, and perhaps of vomiting, a moisture breaks out; the abdomen often becomes much swollen, and is remarkably hot, whilst the extremities are much colder than usual. One of the most frequent and distressing symptoms, in this very formidable complaint, is a severe pain or griping in the bowels: this may be known by the child starting, by frequent fits of crying, and the forcible contraction of the arms towards the stomach. Coma is often met with, about this stage of the disease.

The duration of this disease is various, depending much on the manner in which it comes on, the habit and changes of either, as well as the epidemic, which consists of various degrees. The disease is seldom preceded by a chill, but when it is, it is indicative of a more violent attack. If the first attack is with violence and left to nature, all the alarming symptoms rapidly increase till the strength of the patient is suddenly diminished, when a fainting comes on attended with cold extremities, cold sweat, and subsultus tendinum, which often put an end to the unhap-

py little sufferer in one day. A hot, dry and moist atmosphere seldom fails to encrease all the violence of the disease, whereas a cold day frequently abates its violence, and disposes it to a favourable termination. It continues in some instances, with but few alterations, for five or six weeks, and even two or three months, before any considerable change takes place, when the symptoms become more numerous and distressing: the body becomes emaciated to such a degree that the bones, in some cases almost protrude the skin; a constant inclination to stool takes place, though but little matter can be voided, and that is of a watery or green colour; the eyes become languid and sink deep within their sockets; the features are contracted, livid spots appear, in a few cases, and other eruptions in the mouth and fauces, sometimes extending through the whole canal, hiccups and convulsions, genereally precede the fatal termination of the disease.

DIAGNOSIS.

The diseases with which cholera infantum may be confounded are, hydrocephalus, internus, dysentery, and affections arising from worms in the alimentary canal.

To distinguish it from hydrocephalus internus, it is necessary to remark, that the pulse in the latter generally continues more full, tense and frequent, and the evacuations, when they do occur, are not so copious, nor accompanied with any discharge of bile. It is more frequently attended with an obstinate pain in the head, the pupils of the eyes much dilated, strabismus or squinting, much disturbed with noise, and preceded by or accompanied with a constipation of the bowels. It is nevertheless true, that an effusion of

water in the ventricles of the brain is sometimes symptomatic of cholera infantum, as well as other fevers.

It is distinguished from dysentery, by the appearance of the discharges being more copious and bilious; and by being seldom accompanied by blood; nor is it attended with that degree of pungent pain and griping, so distressing in dysentery, and from the latter being a more rare occurrence among children. Cholera infantum may be distinguished from affections arising from worms, by the characteristic symptoms of worms being present, such as a slight cough, the picking or rubbing of the nose. The excretions are also different, nor is it preceded by, or accompanied with that voracious appetite and disturbed sleep, that the presence of worms in the alimentary canal may occasion.

PROGNOSIS.

In most diseases it appears to be an arduous task to lay down decided and unequivocal prognostic symptoms; as patients have recovered under every discouraging circumstance, whilst others have died when the most favourable prognostics were present. Under these impressions, I feel a delicacy in attempting to say much upon this head; but it is natural to conclude that where the disease attacks a very delicate habit in warm, dry weather, when the vomiting is excessive, the stomach and bowels so extremely irritable as to retain nothing taken into them, with a weak quick pulse, or irregular, and cold extremities, we may inform the parents or nurses of such, that life is suspended as by a thread, and that probably the child will not do well. On the contrary, when the symptoms are more mild, when the vomiting can be restrained or suspended, and when the fever and thirst are not very

great, with slower and more regular pulse, we may encourage them to have confidence, for it is probable the patient will do well.

PREDISPOSING CAUSES.

Predisposition is that state of the body which renders it susceptible of the operation of the exciting cause. This predisposed state of the system, I believe to be debility of the indirect kind, produced by heat on the infantile system. The cause which produces a morbid state, particularly of the bowels and stomach, is debility of the parts, which occasions a greater aptitude in them to be acted upon by the existing causes, and may arise,

1. From hereditary disposition, by weak organization.

A particular irritable state of the stomach and bowels, arising either from natural conformation, or a debilitated state of the body, more especially when this cause were particularly in the stomach and intestines; irregularity in diet, either in quality or quantity.

EXCITING CAUSES.

As debility is the predisposing cause, and places the system in a very excitable state, the exciting cause must be stimulants, which are all such as induce ^{fever} ~~induce~~ fever, and which may be considered as the primary effect. What I shall consider as the exciting causes may be arranged under the following heads,

1. An increased ^{re}sensation of bile.
2. Aliments offensive from quality or quantity.
3. The sudden stoppage of perspiration.
4. Sudden repulsions of certain eruptions on the skin.

5. The eating of unripe fruit or meat, while at the breast, or any unaccustomed food; also an improper secretion of milk, especially nurses who menstruate during lactation.

6. Worms in the alimentary canal often excite cholera.

7. The use of drastic purges, or the long and too frequent use of magnesia, rhubarb, &c. by irritating the stomach and bowels, may induce the disease.

CURE.

As I did not conceive it necessary to take a separate view of the different theories laid down by the different writers on the subject, I shall not at present notice their different modes of cure.

Most of the physicians, and particularly those of the United States, have agreed, that the first and most important step towards a cure, when circumstances will admit, is, to remove the patient from the city, to some healthy part of the adjacent country, where medical aid scarcely will be required.

Professor Potter recommends this plan of proceeding very strenuously; but remarks, "that since the country has been more cleared, a removal to the country is not always attended with the relief that was formerly experienced."

As this disease like other bilious disorders, is often attended with an inflammatory diathesis in the beginning, the first indication of cure must be when we are called early, to lessen the morbid excitement. The remedies for his purpose are, such as will evacuate the bile from the stomach and intestines.

Bloodletting has been practised by many with apparent good effects, they recommend it to be repeated, should the pulse and the other symptoms indicate it.

The bile and other acrid matters are to be evacuated by the use of gentle emetics and cathartics. Dr. Potter appears to give the preference to cathartics. The mildest emetic for this purpose is *epicacuanha*, in small doses. I would not approve of emetics where the *primæ viæ* have been sufficiently evacuated.

The intestines which should be kept open by the use of gentle laxatives, such as manna, castor oil, magnesia, and rhubarb, which has been given in the beginning of the disease, and when the stomach and bowels were not very irritable, have known it to remove the disorder effectually. Calomel in small doses is recommended by Dr. Potter as claiming a pre-eminence over all other remedies. It certainly as a cathartic is preferable to most others. Calomel combined with rhubarb has been recommended.

Dr. Potter recommends blisters applied to the abdomen, immediately after the alimentary canal shall have been freely evacuated, he says they have frequently performed a cure.

When the spontaneous discharge from the alimentary canal has been considerable, when a prostration of strength, feebleness of pulse, and a coldness of the extremities are produced, we may conclude that the disease has already sufficiently, or too much, debilitated the system, and that all further evacuation, excited by artificial means, would be highly improper; recourse must then be had to subdue the vomiting and purging, and to support the strength of the patient.

The following mixture appears to be well calculated for that purpose; a few drops of laudnum, combined with prepared chalk into a julip, with peppermint, or cinnamon water. I have been told by my preceptor it generally composes the stomach and intestines, and frequently subdues the disease entirely. Demulcent and diluting drinks, such as thin barley water, rice,

gruel, and others, are highly useful. Clysters of flaxseed tea, or of starch dissolved in water, with a few drops of laudnum is often attended with a good effect. The use of the above remedies I have known to be attended with good effects, where tenesmus ensued, at the same time employing tonic medecines internally.

In addition to these remedies it is recommended by some to employ injections of cold water; which from the nature of the disease I am inclined to think would be attended with good effect.

Flannels steeped in infusions of bitter and aromatic herbs, in warm spirits or in madeira wine, and applied to the region of the stomach or abdomen, often afford considerable relief. Alum and laudnum, Dr. Potter observes, has been supposed by some as a specific, but should be used only in the latter stage of the disease. Magnesia, rhubarb, and opium has also been supposed as a specific; but should be used as the preceding remedies.

Blisters applied to the arms, legs and stomach, by inviting morbid action from the alimentary canal, are thought to be highly useful.

When the violent convulsive action of the stomach and bowels is composed, the strength of the patient must be supported by the use of tonic and cordial medecines, or by a removal to the country.

The principal tonic recommended in this (as well as in all other diseases where debility is induced) is Peruvian bark, either in decoction or substance; in the latter form it can seldom be taken in sufficiently large quantities to be serviceable, as children are averse to swallowing any thing nauseous.

The bark in decoction, with a few drops of laudnum, often repeated in small doses, has produced the most salutary effects: columbo root, given in decoction or

tincture, is thought by some to be a valuable medecine; it is both a tonic and a stimulant.

Calomel combined with opium, as they are both stimulants, I should suppose might be used with great advantage. Port wine or claret, mixed with water are likewise proper in this stage of the disorder.

What appears to be of great importance in this disease, is a proper regulation of diet. I believe in this stage of the disease, our dependence may rest much on diet, and particularly if we can with it, have recourse to the country air, the patient will, most speedily with no other remedy rapidly regain strength.

The diet should be, first of a nourishing and gently stimulating kind; most of the farinaceous substances may be employed with advantage, such as sago and tapioca: the diet from the animal kingdom, should be, first, used such as veal and chicken broth: from these we may gradually increase to a more nourishing diet, as meats boiled and roasted. There are some stomachs that receive the lean of smoked meats kindly and recover under their use.

I shall conclude this inaugural essay by mentioning the best means of preventing the occurrence of this disease.

1. By avoiding the causes that induce debility, and all such as stimulate the system.

2. Regularity in diet and drink, with a faithful attendance in guarding against the changes of weather, by accomodating the dresses of children to them.

3. To avoid costiveness by the use of gentle laxatives, and to attend to cleanliness, both as it respects the skin and clothes.

4. The removal of children to the country before the approach of warm weather.

THE END.